

UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA

Donaldson Company, Inc.,

Plaintiff,

v.

Civ. No. 04-2679 (JNE/JSM)
ORDER

Baldwin Filters, Inc.,

Defendant.

Earl D. Reiland, Esq., Alan W. Kowalchyk, Esq., and Thomas R. Johnson, Esq., Merchant & Gould P.C., appeared for Donaldson Company, Inc.

John W. Kozak, Esq., and Robert T. Wittmann, Esq., Leydig Voit & Mayer, and Daniel C. Bryden, Esq., Kelly & Berens, P.A., appeared for Baldwin Filters, Inc.

Donaldson Company, Inc., brought this action against Baldwin Filters, Inc. (Baldwin), alleging claims of patent infringement. The case is before the Court on the parties' request for construction of disputed claim terms pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

I. BACKGROUND

Donaldson owns the patent rights to U.S. Patent Nos. 5,690,712 ('712 Patent); 6,004,366 ('366 Patent); and 6,521,009 ('009 Patent) (together, patents in suit). The patents in suit are each entitled "Reverse Flow Air Filter Arrangement and Method." The patents in suit involve inventions covering air filters used to remove dirt and other contaminants from air. A reverse flow air filter is one in which unfiltered air enters the inner cavity of the filter and is filtered as it passes through the filter from the inside out. Thus, the filtering flow is in a direction with the "clean" side being on the exterior, and the "dirty" side being on the interior, of the filter. Such air filters are used in the engines of over-the-highway trucks.

II. DISCUSSION

A. Claim construction principles

Patent claim construction is a matter of law for the court. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). Proper claim construction requires an examination of the intrinsic evidence of the record, including the claims, the specification, and, if in evidence, the prosecution history. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). The starting point for claim construction is a review of the words of the claims themselves. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006); *Vitronics*, 90 F.3d at 1582 (“First, we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention.”). The words of a claim are generally given their ordinary and customary meaning—the meaning that the term would have to a person of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312-13. “[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* In some cases, the ordinary and customary meaning is readily apparent; and in such cases, general purpose dictionaries may be helpful. *Id.* at 1314. The claims must be read in view of the specification, which is always highly relevant to claim construction. *Id.* at 1315. The specification may provide a special definition given to a claim term or a disavowal of claim scope by the inventor. *Id.* at 1316. The court may not, however, import limitations found only in the specification. *Id.* at 1323; *Electro Med. Sys. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994) (“claims are not to be interpreted by adding limitations appearing only in the specification”). The court should also consider the patent’s prosecution history, which provides

evidence of how the United States Patent and Trademark Office and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. In most situations, intrinsic evidence will resolve any ambiguity in a disputed term, and it is improper to rely on extrinsic evidence when intrinsic evidence does so. *Vitronics*, 90 F.3d at 1583. Here, the parties agree that extrinsic evidence is not necessary.

B. The patents in suit

1. The '712 Patent

The disputed claim language of the '712 Patent reads as follows:

7. An air filter comprising:

- (a) first and second, opposite, end caps;
- (b) cylindrical filter media potted within, and extending between, the first and second, opposite, end caps;
 - (i) said filter media defining an open filter interior;
- (c) said first end cap being an open airflow inlet;
- (d) said second end cap comprising molded polymeric material and having an outer surface;
 - (i) said second end cap having a circular sealing trough in said outer surface;
 - (ii) said circular sealing trough having a smaller diameter than an inside diameter of said cylindrical filter media.

....

9. An air filter according to claim 8 wherein:

- (a) said second end cap includes a central drainage aperture therethrough; said central drainage aperture having a smaller diameter than said circular sealing trough.

....

10. An air filter arrangement according to claim 7 wherein;

- (a) said second end cap has:
 - (i) a central drainage aperture; said central drainage aperture being smaller in diameter than said circular sealing trough.

a. "air filter"

The term "air filter" appears in the preamble of claim 7 of the '712 Patent. Donaldson asserts that "air filter" has a meaning readily understood by one of skill in the art and

construction of the term is not necessary. Baldwin asserts that “air filter” should be construed as “an air filter arrangement including a housing, an air filter element, and an air flow direction arrangement.” Baldwin further asserts that the use of “air filter” in the preamble should limit the claim.

The preamble is an introductory statement that precedes the body of the claim. In general, it is not limiting. *See Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). If the body of the claim “sets out the complete invention,” the preamble does not limit the scope of the claim. *See Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1310 (Fed. Cir. 2002). On the other hand, if the preamble recites essential structure that is important to the invention or necessary to give meaning to the claim, it is regarded as limiting. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952-53 (Fed. Cir. 2006) (preamble limiting where the claim does not recite the complete invention, but refers back to certain features described in the preamble).

The first question presented is whether “air filter” refers to an overall air filter arrangement or whether it refers simply to an air filter element. Donaldson contends that “air filter” is simply an air filter element. Baldwin argues that “air filter” refers to an air filter arrangement that includes a housing, a filter element, and an air flow direction arrangement.

The Court determines that “air filter” has not acquired the meaning proposed by Baldwin. Instead, the Court determines that “air filter” in the preamble of claim 7 refers to the air filter element alone. First, the claim language itself is clear and creates no ambiguity as to the meaning of “air filter.” The language in the preamble, “[a]n air filter comprising,” does not refer to a filter arrangement or other structural housing components. Instead, it refers simply to an air filter element. Similarly, the body of claim 7 recites an air filter element only and not the

housing components that Baldwin contends should be part of the claim.¹ In addition, the specification discusses the filter element itself, without inclusion of other structural housing components: “According to the present invention, a preferred filter element is provided,” ’712 Patent, col. 3, ll. 30-31; “[o]ther preferred features for the preferred air filter element include: a circular sealing trough on an outer surface of the second end cap,” *id.*, col. 3, ll. 49-51; and “[e]lement 21 [the “air cleaner element”] includes first and second end caps 23 and 24; filter media 25; inner support 26 (FIG. 4); and, outer support (27),” *id.*, col. 5, ll. 6-9. Further, Figure 3 of the ’712 Patent illustrates that the air cleaner element (the air filter), as part of an “air cleaner assembly,” can be placed in the air cleaner can (housing), thus demonstrating their separate nature.

The Court recognizes that there are numerous references to an “air filter arrangement” in the specification.² However, when the specification is viewed in its entirety, these references do

¹ Baldwin argues that the preamble to claim 10, which reads “[a]n air filter arrangement according to claim 7,” supports its proposed construction. The Court disagrees. First, claim 10 is a dependent claim and does not alter the plain meaning of “air filter” in the preamble of independent claim 7. Second, the body of claim 10, as well as that of each of dependent claims 8 through 15, does not recite the housing and other components that Baldwin contends are part of the claim.

² For example, the Summary of the Invention reads:

According to the present invention an air filter arrangement is provided. The air filter arrangement includes a housing and an air filter element having first and second opposite end caps, filter media and an open filter interior. . . . The air filter arrangement also includes an air flow direction arrangement constructed and arranged to direct air flow into the housing, in the open filter interior The air flow direction arrangement generally comprises various features of the housing, seals and filter element.

’712 Patent, col. 2, ll. 5-25. Similarly, the abstract provides: “A reverse flow air filter arrangement is provided. The arrangement includes a filter element having first and second end caps, the second end cap having a central drainage aperture. . . . The arrangement includes a housing in which the filter element is positioned, operatively, during use.”

not transform the unambiguous subject matter of the claim—an air filter—into one for an air filter arrangement. Instead, these references describe the relationship between the filter element and the housing components. Nothing in the specification indicates that the plain meaning of “air filter” is something other than the filter element. Because the claim language creates no ambiguity as to the meaning of “air filter” and does not require that the housing components become part of the claim, the Court declines to construe the term. In addition, because the housing components are not part of the “air filter,” the preamble, which simply reads “[a]n air filter comprising,” does not recite essential structure. Therefore, it does not limit the claim.³

b. “said first end cap being an open airflow inlet”

The phrase “said first end cap being an open airflow inlet” appears in claim 7 of the ’712 Patent.⁴ Donaldson asserts that the phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that “said first end cap being an open airflow inlet” should be construed as “the first end cap having an opening and being assembled as part of a reverse flow air filter arrangement including a housing and an air flow direction arrangement.” Baldwin argues that requiring an airflow inlet places an express structural limitation on the claimed device that cannot be met by the filter element alone. Specifically, Baldwin submits that an end cap defines an inlet only if the claimed device is a combination of the overall air filter arrangement (housing, filter, and air flow direction

³ Baldwin also argues that a housing and an airflow direction arrangement are required because of limitations included in the body of claim 7. For example, Baldwin argues that “said first cap being an open airflow inlet” exists only in the context of the air filter arrangement as a whole. The Court rejects this argument for the reasons discussed in the construction of “said first end cap being an open airflow inlet” below.

⁴ Also at issue is the phrase “defining an air inlet aperture” in claim 1 of both the ’366 and ’009 Patents. Baldwin argues that those claims require the same construction as “open airflow inlet” in claim 7 of the ’712 Patent.

arrangement). In part, Baldwin argues that a user cannot identify which end of the air filter is an inlet without reference to the housing and air flow direction arrangement. In the alternative, Baldwin argues that “said first end cap being an open airflow inlet” should be construed as “the first end cap having an opening” or at most “the first end cap having an opening capable of being used as an inlet.” Baldwin submits that if the housing and air flow direction arrangement are not included in the claim, being an inlet is only an intended use because the opening standing alone (without being part of a reverse flow arrangement) is neither an inlet nor an outlet.

Baldwin relies on *Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293 (Fed. Cir. 2005), in arguing that the “inlet” imposes an express structural limitation on the claim. The Court finds such reliance unpersuasive. In *Cross Medical*, the Federal Circuit reviewed the district court’s construction of the term “operatively joined” in a patent concerning orthopedic surgical implants used to stabilize and align spinal bones.⁵ 424 F.3d at 1305-06. Although the claim does not “state explicitly whether ‘the bone interface’ and the ‘bone segment’ must be in contact,” the Federal Circuit reasoned that use of the word “joined” indicates that the interface and the bone must be connected. *Id.* at 1305. The Federal Circuit concluded that the “‘lower bone interface [is] operatively joined to said bone segment’ when the interface and the bone segment are connected and in contact such that the device is effective to perform posterior stabilization.” *Id.* at 1306. In its infringement discussion, the Federal Circuit explained that the claim has a structural limitation that the “anchor seat be in contact with the bone.” *Id.* at 1311. *Cross Medical* is distinguishable from the present case because the text of

⁵ The claim language recites an “anchor seat means which has a lower bone interface operatively joined to said bone segment.”

claim 7 of the '712 Patent does not provide that the air filter element is "joined" with a housing or an air flow direction arrangement.

The Court determines that the phrase "said first end cap being an open airflow inlet" has not acquired the meaning proposed by Baldwin. Looking to the claim language, the Court notes that none of the structure that Baldwin requests be included in the claim forms a part of an end cap that is an inlet. The claim does not recite a housing or an air flow direction arrangement. Nor does it recite a detailed description of a housing's or an air flow direction arrangement's physical characteristics. Further, the Court declines to adopt Baldwin's alternative proposed construction. Doing so would improperly eliminate language essential to the claim. *See Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 908 (Fed. Cir. 2005) ("We think this view reads out the essence of the claim limitation 'substantially flat' as it equates 'flattened' to 'flat.'"). The claim language and the specification both describe an end cap with an inlet. *See* '712 Patent, col. 5, ll. 29-31 ("That is, end cap 23 includes a large inlet aperture 28 (FIG. 4) therein, for introduction of air to be filtered into filter element interior 35."). In addition, a reading of the claims by one skilled in the art would indicate which end of the air filter has the inlet and which end has the outlet. Specifically, claim 7 of the '712 Patent recites in part: "said first end cap being an open airflow inlet;" "said second end cap comprising molded polymeric material and having an outer surface;" with "said second end cap having a circular sealing trough." One skilled in the art could read the claims and understand that the inlet end of the filter is opposite the end with the circular sealing trough.⁶ Thus, it is unnecessary to read a housing or an air flow direction arrangement into the claim to understand the air inlet structure of the first

⁶ In addition, one skilled in the art could read the claims of the '366 and '009 Patents and discern that the end caps of the air filter are structurally different.

end cap of the claimed filter. Accordingly, the Court declines to adopt Baldwin's proposed constructions and does not construe the phrase "said first end cap being an open airflow inlet."

c. "said second end cap comprising molded polymeric material"

The phrase "said second end cap comprising molded polymeric material" appears in claim 7 of the '712 Patent.⁷ Donaldson asserts that the phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as "the second end cap is made of a uniform molded polymeric material." Baldwin argues that its construction is appropriate because the claims are properly limited to a single type of material. In support, Baldwin argues that the claim language and references in the specification refer to the polymeric material of the end cap in singular form.

The Court determines that addition of the term "uniform" to the claim language is not warranted. As a threshold matter, the Court notes that Baldwin's proposed use of the word "uniform" to indicate a singular type of material is problematic because the word "uniform" has several meanings. For example, "uniform" can mean "having always the same form, manner, or degree: not varying or variable," "of the same form with others," or "presenting an undiversified appearance of surface, pattern, or color." *Merriam-Webster's Collegiate Dictionary* 1287 (10th ed. 2001). Thus, to the extent that Baldwin seeks to limit the claim to a single material, its proposed use of the word "uniform" is not appropriate. Looking to the claim language—"comprising molded polymeric material"—the Court further notes that there is no limitation requiring the polymeric material to be of a singular type; nor is there any requirement that it be

⁷ Also at issue are the phrases "said first end cap comprising polymeric material" and "said second end cap comprising polymeric material" in claim 1 of the '009 Patent. With the exception of the word "molded," Baldwin argues that the claims require the same construction.

“uniform.” Baldwin is correct that there are references to “a” soft polymeric material in the patent specification. *See* ’712 Patent, col. 3, ll. 11-12 (“In preferred embodiments, a soft polymeric material is utilized for the first and second end caps.”); *id.*, col. 6, ll. 65 (“[e]nd cap 24 is of an appropriate material”). However, the claim itself does not recite a single or uniform material. Therefore, the Court declines to read into the claims any such limitations from the specification.⁸ *See Phillips*, 415 F.3d at 1323. Finding no support for Baldwin’s proposed construction, the Court declines to construe the claim language.

d. “sealing trough”

The term “sealing trough” appears in claim 7 of the ’712 Patent. Donaldson asserts that the term should be construed as a “depression or recess which cooperates with corresponding raised structure to inhibit migration of water or debris from one side of the structure to the other.” Baldwin initially contended that the term should be construed as “a recess in the outer surface of the second end cap that forms a seal with the housing to prevent the passage of water and other contaminants.”⁹ In its post-*Markman* brief, Baldwin proposed the following construction:

a recess in the outer surface of the second end cap that forms a seal with the housing to inhibit the passage of water and other contaminants wherein the seal

⁸ The present case differs from the cases relied on by Baldwin wherein both the claim language and the specification indicated that certain patent claims were singular. *See, e.g., Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1024 (Fed. Cir. 1997) (construing “a metallic gas-confining chamber;” noting that the article “a” suggests a single chamber); *Insituform Techs., Inc. v. Cat Contracting, Inc.*, 99 F.3d 1098, 1106 (Fed. Cir. 1996) (construing claim reciting “a cup” followed by reference to “the cup”); *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 03-CV-7713, 2005 WL 1838451, *4 (N.D. Ill. July 28, 2005) (construing “a pre-soaked fabric roll”). Here, the text of the claim does not refer to “a” polymeric material.

⁹ At the *Markman* hearing, Donaldson agreed to Baldwin’s proposed construction provided the word “prevent” was replaced with “inhibit.”

maintains a pressure differential of up to about 2 inches (and typically only up to about 2-4 inches) of H₂O.

Nothing in the claim language or the patent specification indicates that the purpose of the “sealing trough” is to *prevent* the passage of water or contaminants. Instead, the specification describes the purpose of the “secondary seal” as to *inhibit* movement of debris and water.¹⁰ For example, the specification reads: “The secondary seal 80 is generally provided to inhibit movement of debris or water into region 81, between element 21 and base 63, rather than to necessarily prevent flow of air therebetween.” ’712 Patent, col. 7, ll. 9-14. The specification also provides that the “secondary seal 80 will inhibit the likelihood of debris or moisture moving from pan 71 into surface 69, or region 77.” *Id.*, col. 8, ll. 27-29. Therefore, the Court determines that the purpose of the “sealing trough” is to inhibit the passage of water and other contaminants.

Baldwin also asks that the “sealing trough” be required to maintain a pressure differential of up to about 2 inches (and typically only up to about 2-4 inches) of H₂O. The Court notes that the specification indicates that the “secondary seal” will “generally be sufficient if it can maintain at pressure differential thereacross of up to about 2 inches (and typically only up to about 2-4 inches) of H₂O.” *Id.*, col. 7, ll. 16-19. That portion of the specification, however, appears to offer a comparison between the outer primary seal that “prevents” the flow of unfiltered air from reaching the clean air path to the engine, and the secondary seal that is “generally provided to inhibit movement of debris or water into region 81.” The Court declines to import the specification’s general description of effectiveness of the secondary seal into the claim language.

¹⁰ The “sealing trough” of the second end cap and a housing sealing bead form the “secondary seal.”

Consistent with the claim language and the specification, the Court construes “sealing trough” as “a recess in the outer surface of the second end cap that forms a seal with a housing to inhibit the passage of water and other contaminants.”

e. “central drainage aperture”

The term “central drainage aperture” appears in claims 9 and 10 of the ’712 Patent.¹¹ Donaldson asserts that the phrase has a meaning readily understood by one of skill in the art and construction is not necessary. Baldwin asserts that this term should be construed as “an opening in the second end cap at the base of a sloped interior surface that allows water and other contaminants to flow out from the open filter interior.” Baldwin argues that because the term “drainage” modifies “aperture,” the claimed aperture must include some limitation beyond simply being an opening. Baldwin points to the several portions of the patent specification that it contends set forth the overall arrangement that makes the bottom end cap opening a drainage aperture. In addition, Baldwin claims that the patent applicant disavowed any construction of drainage aperture that would broadly cover any opening in an end cap. In particular, Baldwin argues that the applicant did so to overcome inefficient drainage of the prior art. Baldwin also directs the Court to certain statements made in a patent application from which the ’712 Patent claims priority describing the prior art and certain drainage structures therein.¹²

¹¹ The terms “drainage aperture” and “aperture” appear in claim 1 of the ’366 Patent and claim 1 of the ’009 Patent, respectively. Baldwin proposes that the terms be construed consistently.

¹² Such statements include:

Exhibits 1-3 of the Declaration show an end cap with an angled surface angled toward an aperture. However, . . . the interior surface is not angled from an outside edge toward the central drainage aperture and is not constructed and arranged to funnel moisture to a central drainage aperture.

Upon examination of the intrinsic evidence, the Court determines that one of the ordinary skill in the art would define “drainage aperture” without reference to the slope or configuration of the surrounding end cap surface. Instead, one skilled in the art would understand that the “drainage aperture” and surrounding surface are separate and distinct. Looking first to the language of the claims, the Court discerns that there is no ambiguity in the term “drainage aperture”—it is simply a hole or an opening in the second end cap. *See* ’712 Patent, claim 9 (“said second end cap includes a central drainage aperture”); *id.*, claim 10 (“said second end cap has: a central drainage aperture”). Neither claim contains language regarding the slope or configuration of the internal surface of the second end cap that surrounds the “drainage aperture.” Instead, the claims recite only the “central drainage aperture.” The specification reinforces the separate nature of the “drainage aperture” and the surrounding interior surface:

The second end cap preferably has a central drainage aperture and an interior surface constructed and arranged to funnel moisture, collected on the interior surface of the second end cap, to the central drainage aperture.

’712 Patent, col. 3, ll. 37-41; ’366 Patent, col. 3, ll. 56-59. The use of the word “and” in the above example demonstrates that the drainage aperture and the interior surface are separate structures.

Baldwin suggests that the claim term “drainage aperture” must be construed to include the surrounding internal surface of the second end cap because the only embodiment described in

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Exhibit 4 shows . . . the bottom cover G shown in Exhibit 1. . . . Further the interior surface is not angled from the outside edge toward a central aperture.

....

Exhibit 6-8 . . . Again, these exhibits do not show an end cap with an interior surface angled from an outside edge toward a central drainage aperture.

the specification is of a drainage aperture being at the base of a sloping surface. The Court rejects this suggestion. It would be improper to read into the claim the structure of the interior surface described in this specific embodiment.¹³ *See Phillips*, 415 F.3d at 1323 (noting that the Federal Circuit has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment”); *Playtex*, 400 F.3d at 908 (“Claims of a patent may only be limited to a preferred embodiment by the express declaration of the patentee.”).

Baldwin’s disavowal arguments are also unavailing. First, Baldwin has not demonstrated that a sloped interior surface is necessary to achieve significant drainage. The Court notes that the filter is installed vertically. Thus, water will filter out through the bottom end cap through the drainage aperture even without a sloped interior surface. Second, Baldwin relies on remarks made during the prosecution of a related application that eventually matured into U.S. Patent No. 5,612,992. At the time the remarks were made, however, the pending claims included both a central drainage aperture *and* an interior surface “being angled from the outer region toward the central drainage aperture.” Because those claims describe structure different from that of claims 9 and 10 of the ’712 Patent, which do not recite the surface surrounding the aperture, the remarks are not relevant. *See ResQNet.com, Inc. v. Lansa, Inc.*, 346 F.3d 1374, 1383 (Fed. Cir. 2003).¹⁴

¹³ The Court notes that the specification describes additional functions of the interior surface, yet such features are not read into the construction of the drainage aperture. For example, “[i]n some embodiments recessed, radial troughs extending outwardly and upwardly from central aperture 96 can be used to facilitate this flow. . . . An advantage to troughs 99 is that should a leaf or other large particulate material become positioned over central aperture 96, water can still flow into and through aperture 96 by means of the troughs.” ’712, col. 6, ll. 52-65; *see also* ’366 Patent, col. 8, ll. 47-62; ’009 Patent, col. 8, ll. 50-65.

¹⁴ Moreover, the Court notes that both the ’366 and ’009 Patents contain dependent claims that contain limitations describing the structural surface surrounding the aperture as being “angled” or “an inner funnel.” *See* ’366 Patent, claim 3; ’009 Patent, claim 15. Thus, it is

In sum, the Court concludes that the intrinsic evidence does not support Baldwin's proposed construction. Accordingly, the Court declines to construe to claim language.

2. *The '366 Patent*

The disputed claim language of the '366 Patent reads as follows:

1. An air filter comprising:
 - (a) a cylindrical extension of media having first and second, opposite ends;
 - (i) said extension of media defining an open filter interior;
 - (ii) said extension of media comprising pleated paper;
 - (b) a first end cap at said first end of said extension of media; said first end cap defining an air inlet aperture in airflow communication with said open filter interior; said first end cap being circular; said air inlet aperture being circular;
 - (i) a sealing arrangement lining said first end cap air inlet aperture; said sealing arrangement including a sealing portion of polymeric material positioned within the open filter interior; said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube, when the filter element is mounted on an air flow tube;
 - (ii) the sealing portion defining a circular air inlet having at least a portion that is tapered in decreasing diameter toward said open filter interior, when said filter element is not mounted on an air flow tube;
 - (iii) said extension of media being potted within said first end cap;
 - (c) a second end cap at said second end of said extension of media; said second end cap defining a drainage aperture in communication with said open filter interior; said second end cap being circular and having an outer periphery and an outer annular surface;
 - (i) a second end cap sealing portion lining the outer annular surface of said second end cap; said second end cap sealing portion comprising a polymeric material; said second end cap sealing portion being sufficiently soft to seal against a sealing surface of a housing to form a radial seal against a sealing surface of a housing, when the filter element is mounted in a housing;
 - (ii) said second end cap sealing portion including at least first and second regions of different diameters;
 - (A) said first region being between said first end cap and said second region;
 - (B) said first region having a diameter larger than a diameter of second region;

presumed that the patentee did not intend for the drainage aperture to include the inner surface limitation in the independent claims. *See Phillips*, 415 F.3d at 1315 (“the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim”).

- (iii) said second end cap having an outer surface; said second end cap having a troughed portion in said outer surface;
- (iv) said drainage aperture being circular and having a diameter smaller than an inner diameter of said cylindrical extension of media;
- (d) a cylindrical inner support extending between said first and second end caps;
 - (i) said inner support having a diameter larger than the diameter of said drainage aperture;
- (e) a cylindrical outer support extending between said first and second end caps;
 - (i) said cylindrical extension of media being oriented between said inner and outer supports;
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6. A filter element according to claim 1 wherein:

- (a) said drainage aperture is substantially smaller than an inside diameter of said cylindrical extension of media.

a. “said first end cap defining an air inlet aperture”

The phrase “said first end cap defining an air inlet aperture” appears in claim 1 of the ’366 Patent. The parties’ arguments regarding the construction of “said first end cap being an open airflow inlet” in claim 7 of the ’712 Patent apply to the construction of this phrase. For the reasons discussed above, the Court declines to construe this phrase.

b. “said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support”

The phrase “said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support” appears in claim 1 of the ’366 Patent. Donaldson asserts this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as “a sealing portion of the first end cap is made of polymeric material sufficiently soft such that it is radially compressed between and against the air flow tube and cylindrical inner support.”

First, Baldwin proposes that the “air flow tube” be construed as a required functional component of this claim. In support, Baldwin argues that the claim language “to seal against an air flow tube” requires that the portion of the first end cap form a radial seal with the air flow tube, and that such limitation can only be met if the air flow tube is present. In contrast, Donaldson contends that the air flow tube is a work-piece or an environmental element that is not part of the claim simply because it touches the filter in use.

Looking first to the language of the claim, it is apparent that the air flow tube is not the subject of the clause. The text of the claim does not mention an air flow tube positively as an element of the claim. Instead, the air flow tube is mentioned to explain how the air filter seals when installed in an assembly and is part of the environment in which the claimed air filter operates. *See SDS USA, Inc. v. Ken Specialties, Inc.*, 107 F. Supp. 2d 574, 593 (D.N.J. 2000). Specifically, the claim language discusses the air flow tube using words indicating that it is an environmental element. For example, the claim states: “said sealing portion being sufficiently soft to seal against an air flow tube to form a radial seal against the air flow tube, *when the filter element is mounted on an air flow tube*” (emphasis added).¹⁵

The Court recognizes that when a claim includes detailed structural language on another element, it can become a claim limitation. For example, in *Bicon*, the Federal Circuit affirmed the construction of a claim term in a patent for an apparatus used with dental implants. 441 F.3d at 952. The claim at issue in *Bicon* recited in part “[a]n emergence cuff member for use in preserving the interdental papilla during the procedure of placing an abutment on a root member

¹⁵ Claim 1 of the ’009 Patent reads in part: “said sealing portion being oriented to seal around, and against, an appropriately sized air flow tube, *whenever* the filter element is operatively positioned with the airflow tube projecting through said air inlet aperture” (emphasis added).

implanted in the . . . bone of a patient.” *Id.* at 949. The district court construed the claim to include both the “emergence cuff member” and an “abutment.” *Id.* at 952. In affirming, the Federal Circuit noted that:

[d]espite the fact that the claim begins with a reference to the emergence cuff alone, the full text of the claim, read in the context of the entire patent, indicates that the claimed invention is the combination of the emergence cuff and the abutment, operating together in the fashion recited in the claim and described in the specification.

Id. at 952. Here, however, there is no detailed or significant reference in the claim to the air flow tube.¹⁶ Instead, reference to the air flow tube is necessary to describe the invention, but the air flow tube is not an element of the claim. *See SDS*, 107 F. Supp. 2d at 593.

Second, Baldwin argues that the overall limitation in this claim should be construed to mean “the sealing portion of the first end cap is made of polymeric material sufficiently soft such that it is radially compressed between and against the air flow tube and cylindrical inner support.” In support, Baldwin points to the following language in the specification:

When assembled, inlet tube 14 extends into aperture 28 in end cap 23. At least in this location, end cap 23 is preferably formed of a soft compressible material. . . . For the particular arrangement shown in FIGS. 1-7, material at region 40 is compressed between and against both inlet tube 14 and inner support 26; that is, inner support 26 is set sufficiently deeply into end cap 23 that a portion of it is positioned behind compressible region 40, to provide support. Thus, a good seal is effected.

’366 Patent, col. 6, ll. 29-56.

¹⁶ In contrast, in *Bicon*, the Federal Circuit noted that the claim at issue included a detailed description of the abutment’s physical characteristics (*i.e.*, the abutment has “a frusto-spherical basal surface portion and a conical surface portion having a selected height extending therefrom”) and defined the emergence cuff in a way that depends on those characteristics (*i.e.*, “the internal bore of the emergence cuff has ‘a taper generally matching that of the conical surface portion of the abutment’” and “‘the distance between the first and second ends [of the emergence cuff is] less than the height of the conical surface’ of the abutment”). 441 F.3d at 950 (“Together, the preamble and the body of the claim contain a detailed description of the features of the abutment used in connection with the emergence cuff.”).

The claim language itself requires that the “sealing portion” be made of polymeric material and that it be “sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube, when the filter is mounted on an air flow tube.” The claim language does not, however, require a particular type of radial seal. Further, the Court determines that the intrinsic evidence does not support the additional limitation added by the “radially compressed” language proposed by Baldwin. Although the patent specification does discuss the radial sealing between the filter element end caps and a housing and provides that the sealing can involve compression, this type of sealing is an example. The language of the claim is not limited to a particular form of contact. Therefore, the Court declines to import the limitation appearing only in the specification. *See Phillips*, 415 F.3d at 1323. Accordingly, the Court declines to adopt Baldwin’s proposed construction and does not construe the phrase “said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support.”

c. “a sealing surface of a housing” and “a housing”

The terms “a sealing surface of a housing” and “a housing” appear in claim 1 of the ’366 Patent.¹⁷ Donaldson asserts these terms have meanings readily understood by one of skill in the art and construction of the language is not necessary. Baldwin argues that “a sealing surface of a housing” and “a housing” are required structural features of the patent claim because the claim requires cooperation of the filter element and these components.

The Court first looks to the claim language. The claim at issue unambiguously describes an air filter element comprising a cylindrical extension of media and first and second end caps.

¹⁷ Similarly, the terms “an inner annular portion of a housing” and “housing” appear in claim 1 of the ’009 Patent.

A housing is not positively cited as an element of the claim; but instead is mentioned to explain how the claimed air filter element seals when it is installed in an air cleaner assembly. *See SDS*, 107 F. Supp. 2d at 593. For example, the claim provides that “said second end cap sealing portion being sufficiently soft to seal against a sealing surface of a housing to form a radial seal against a sealing surface of a housing, *when* the filter element is mounted in a housing” (emphasis added).¹⁸ Moreover, the claim language does not specify that the air filter element is joined to a housing structure and does not recite a detailed description of a housing’s physical characteristics. Accordingly, the Court determines that “a sealing surface of a housing” and “a housing” are not elements of the claimed air filter.

d. “said second end cap defining a drainage aperture”

The phrase “said second end cap defining a drainage aperture” appears in claim 1 of the ’366 Patent. The parties’ arguments regarding the term “central drainage aperture” in claims 9 and 10 of the ’712 Patent apply to the construction of this phrase. For the reasons discussed above, the Court declines to construe this phrase.

e. “a second end cap sealing portion lining the outer annular surface of said second end cap”

The phrase “a second end cap sealing portion lining the outer annular surface of said second end cap” appears in claim 1 of the ’366 Patent. Donaldson asserts this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as “the outside annular portion of

¹⁸ Claim 1 of the ’009 Patent reads in part: “said second end cap annular portion including a sealing portion defining an outer annular sealing surface positioned to form a seal along and against an inner annular portion of a housing, *when* the filter element is operably installed in a housing for use” (emphasis added).

the second end cap that forms a radial compression seal with the housing.” Baldwin argues that a compression type radial seal is required given use of the term “annual” and the following specification language:

In certain preferred arrangements, . . . the second end cap includes an outer annular compressible portion and the housing includes an annular sealing surface against which the second end cap outer annular compressible portion is sealed, when the air filter arrangement is operatively assembled for use. Such a seal is referred to herein as a peripheral or annular radial seal, around the second end cap. That is, in this context the term “annular” refers to a sealing portion around the outside of the end cap, which seals under radial compression.

’366 Patent, col. 2, ll. 44-53.

The Court declines to adopt Baldwin’s proposed construction. The plain language of the claim requires that the sealing portion line the outer annual surface and that it form a radial seal against a sealing surface of a housing, when the filter element is mounted in a housing. The claim language does not require a particular type of radial seal. Further, the specification does not support the addition of the limitation that the annular portion form a “radial compression seal.” The specification language cited by Baldwin is in a paragraph that begins “in certain preferred arrangements.” Thus, the type of sealing discussed is an example. Because the language of the claim is clear and is not limited to a particular form of contact, the Court declines to import any such limitations appearing in the specification. *See Phillips*, 415 F.3d at 1323. Accordingly, the Court declines to adopt Baldwin’s proposed construction and does not construe the phrase “a second end cap sealing portion lining the outer annular surface of said second end cap.”

f. “first and second regions”

The phrase “first and second regions” appears in claim 1 of the ’366 Patent. The term “regions” is used to describe the outer surface of the bottom end cap that seals against the inside

wall of a housing. Specifically, claim 1(c)(ii) reads: “said second end cap sealing portion including at least first and second regions of different diameters.”¹⁹

Donaldson asserts that this phrase should be construed as “areas of a structure’s surface” or “areas of an end cap’s surface.” Baldwin asserts that the phrase should be construed as “two parallel offset sealing surfaces.” In support, Baldwin argues that the patent specification describes a single embodiment of the regions on the second end cap outer annular surface, which “in the broadest sense are parallel and offset.” In particular, Baldwin argues that FIG. 6 of the patent includes a set of parallel offset sealing surfaces. In addition, Baldwin argues that the specification uses the term “region” interchangeably with the term “step” in describing the annular sealing portion surface, and that such “steps” are parallel and offset.

The patent specification uses the term “region” to describe the surface of both the top end cap and the bottom end cap that seals against a housing. With respect to the top end cap, the specification provides:

Thus, when inlet tube 14 is inserted through aperture 28, end cap material in region 40 will be compressed. In this manner a seal is formed at region 41.

’366 Patent, col. 6, ll. 37-40; ’009 Patent, col. 6, ll. 41-43. The specification goes on to describe the “region” of the upper end cap as a ribbed, stepped, or tapered funnel:

For the particular arrangement shown in FIGS. 1-7, material at region 40 is compressed between and against both inlet tube 14 and inner support 26; that is, inner support 26 is set sufficiently deeply into end cap 23 that a portion of it is positioned behind compressible region 40, to provide support. Thus, a good seal is effected. The shape of aperture 28 in region 41 will preferably be as a ribbed or stepped funnel (or tapered), to facilitate engagement.”

¹⁹ Claim 1 of the ’009 Patent reads in part: “said second end cap annular portion including at least first and second regions of different outside diameters.” The parties agree that the term “first and second regions” should be construed the same in both patents.

'366 Patent, col. 6, ll. 50-58; '009 Patent, col. 6, ll. 54-61. The description of the term "region" with respect to the top end cap is relevant to the Court's construction of "regions" in claim 1(c)(ii), as it is used to describe the outer surface of the bottom end cap. *See Phillips*, 415 F.3d at 1314 ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.").

The specification also describes the outer surface of the bottom end cap that seals against the filter housing. *See* '366 Patent, col. 9, ll. 26-48; '009 Patent, col. 9, ll. 30-53. While that portion of the specification describes a "preferred configuration for surface 75" that "includes steps 101, 102 and 103, with extensions 105 and 106 therebetween," the patent also describes different shapes for the bottom end cap. In particular, FIG. 13 of the '366 Patent illustrates a mold used to make a second end cap with a different configuration than the "stepped" configuration pictured in FIG. 6. Even though the specification does not discuss in detail the end cap that would result from using the mold in FIG. 13, it discloses a generally tapered configuration to one skilled in the art.

Accordingly, the Court determines that Baldwin's proposed definition of regions requiring two parallel offset sealing surfaces would improperly limit the claim to the "stepped" configuration of an embodiment. Consistent with the claim language and the specification, the Court construes "regions" as "areas of an end cap's surface."

g. "a troughed portion"

The phrase "a troughed portion" appears in claim 1 of the '366 Patent. Baldwin argues that even though the "troughed portion" is not modified by the word "sealing," it must be construed to have the same meaning as "sealing trough" in claim 7 of the '712 Patent. Donaldson, on the other hand, asserts this phrase has a meaning readily understood by one of

skill in the art and construction of the language is not necessary. After a review of the intrinsic evidence, the Court concludes that the claim language creates no ambiguity and that “a troughed portion” has a meaning readily understood by one of skill in the art. Accordingly, the Court declines to construe “a troughed portion”.

- h. “said drainage aperture is substantially smaller than an inside diameter of said cylindrical extension of media.”

The phrase “said drainage aperture is substantially smaller than an inside diameter of said cylindrical extension of media” appears in claim 6 of the '366 Patent. Baldwin originally requested that this phrase be construed. Baldwin has withdrawn its request. Accordingly, the Court will not construe the claim.

3. *The '009 Patent*

The disputed claim language of the '009 Patent reads as follows:

1. A filter element comprising:
 - (a) an extension of pleated filter media defining an open filter interior and having first and second ends;
 - (b) a first end cap positioned on said first end of said extension of pleated media; said first end cap defining an air inlet aperture in air flow communication with said open filter interior; said air inlet aperture being circular;
 - (i) said first end cap comprising polymeric material;
 - (ii) a portion of said polymeric material of said first end cap being positioned to line said first end cap air inlet aperture;
 - (iii) said portion of polymeric material positioned to line said first end cap air inlet aperture including a sealing portion of polymeric material; said sealing portion being oriented to seal around, and against, an appropriately sized air flow tube, whenever the filter element is operably positioned with the air flow tube projecting through said air inlet aperture;
 - (c) a second end cap positioned on said second end of said extension of pleated media; said second end cap having an aperture extending therethrough in communication with said open filter interior; said aperture in said second end cap having a smaller inside diameter than an inside diameter of said aperture in said first end cap; said second end cap comprising polymeric material;
 - (i) said second end cap being circular and having a second end cap annular portion comprising polymeric material annularly circumscribing a remainder of said second end cap; said second end cap annular portion including a sealing portion defining an outer annular sealing surface positioned to form a

seal along and against an inner annular portion of a housing, when the filter element is operably installed in a housing for use; said second end cap annular portion including at least first and second regions of different outside diameters:

- (1) said first region being positioned at a location between said first end cap and said second region; and
- (2) said first region having a diameter larger than a diameter of second region.

....

6. A filter element according to claim 4 wherein:

- (a) said second end cap has an outer surface directed away from said first end cap;
 - (i) said second end cap outer surface includes a circular trough portion therein positioned surrounding, and spaced from, said aperture in said second end cap.

...

30. A filter element according to claim 29 wherein:

- (a) said second end cap has an outer surface directed away from said first end cap;
 - (i) said second end cap outer surface includes a circular trough portion therein positioned surrounding, and spaced from, said aperture in said second end cap.

a. "said first end cap defining an air inlet aperture"

The phrase "said first end cap defining an air inlet aperture" appears in claim 1 of the '009 Patent. The parties' arguments regarding the construction of "said first end cap being an open airflow inlet" in claim 7 of the '712 Patent apply to the construction of this phrase. For the reasons discussed above, the Court declines to construe this phrase.

b. "said first end cap comprising polymeric material"

The phrase "said first end cap comprising polymeric material" appears in claim 1 of the '009 Patent. The parties' arguments regarding the construction of "said second end cap comprising molded polymeric material" in claim 7 of the '712 Patent apply here. For the reasons discussed above, the Court declines to construe this phrase.

c. “a sealing portion of polymeric material”

The phrase “a sealing portion of polymeric material” appears in claim 1 of the ’009 Patent. Donaldson asserts this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as “a portion of polymeric material which covers the filter media and which lines the air aperture that is radially compressed against an air flow tube.” The parties’ arguments regarding construction of “said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support” in claim 1 of the ’366 Patent apply here. For the reasons discussed above, the Court concludes that the claim is not limited to a particular form of contact. In addition, the Court concludes that the claim language has a meaning readily understood by one of skill in the art and does not require construction.

d. “air flow tube,” “inner annular portion of a housing,” and “a housing”

The terms “air flow tube,” “inner annular portion of a housing,” and “a housing” appear in claim 1 of the ’009 Patent. The parties’ arguments regarding claim 1 of the ’366 Patent apply to the construction of this claim. For the reasons discussed above, the Court determines that these structures are not elements of the claim.

e. “a second end cap having an aperture extending therethrough”

The phrase “a second end cap having an aperture extending therethrough” appears in claim 1 of the ’009 Patent. Donaldson asserts that this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as “an opening in the second end cap at the base of a sloped interior surface that allows water and other contaminants to flow out from the open filter

interior.” The parties’ arguments regarding construction of “central drainage aperture” in claims 9 and 10 of the ’712 Patent apply here. For the reasons discussed above, the Court declines to adopt the portion of Baldwin’s proposed construction requiring “a sloped interior surface” to become an element of the claim. Further, the Court concludes that the claim language creates no ambiguity as to the meaning of “an aperture” and has a meaning readily understood by one of skill in the art. Accordingly, the Court does not construe “a second end cap having an aperture extending therethrough.”

f. “said second end cap comprising polymeric material”

The phrase “said second end cap comprising polymeric material” appears in claim 1 of the ’009 Patent. The parties’ arguments regarding the construction of “said second end cap comprising molded polymeric material” in claim 7 of the ’712 Patent apply here. For the reasons discussed above, the Court declines to construe this phrase.

g. “a second end cap annular portion”

The phrase “a second end cap annular portion” appears in claim 1 of the ’009 Patent. The parties’ arguments regarding the construction of “a second end cap sealing portion lining the outer annular surface of said second end cap” in claim 1 of the ’366 Patent apply to the construction of this phrase. For the reasons discussed above, the Court declines to construe this phrase.

h. “first and second regions”

The phrase “first and second regions” appears in claim 1 of the ’009 Patent. The parties’ arguments regarding the construction of “first and second regions” in claim 1 of the ’366 Patent apply here. For the reasons discussed above, , the Court construes “regions” as “areas on an end cap’s surface.”

i. “circular trough portion”

The term “circular trough portion” appears in claims 6 and 30 of the ’009 Patent. After a review of the intrinsic evidence, the Court concludes that the claim language creates no ambiguity and that “circular trough portion” has a meaning readily understood by one of skill in the art. Accordingly, the Court declines to construe the term.

III. CONCLUSION

Based on the files, records, and proceedings herein, and for the reasons stated above, IT IS ORDERED THAT the disputed claim terms are construed as set forth in this Order.

Dated: March 8, 2007

s/ Joan N. Ericksen
JOAN N. ERICKSEN
United States District Judge